

salt content and a preservative is added. Finally, the globulin-antitoxin is filtered through paper, then through a Berkefeld filter, and tested in the same manner as is the regular (U. S. P.) antitoxin.

The product still further concentrated and dried in vacuo, is the **Dried Antitoxin Globulin**. This is intended for the extemporaneous preparation of the fluid antitoxin by dissolving in sterile distilled water. It occurs in 3000- and 5000-unit packages and is useful in emergencies where the natural serum is unobtainable. It contains no preservative and keeps indefinitely.

Many conflicting statements have been made for, and against, the globulin form of antitoxin, the chief arguments in favor being its greater concentration and lessened liability to produce urticaria. On the other hand, the intricate chemical processes involved in its preparation may be destructive to delicate bactericidal properties contained in normal serum. It would seem from the consensus of opinion, and taking into account the high-potency natural serum now on the market, that for large doses—upward of 5000 units and over, the “concentrated” (globulin) form is to be preferred. For smaller dosage, the natural (U. S. P.) serum should fulfill requirements. Since there is economy in extracting the globulins from low-grade, discarded, and out-of-date serum, which would otherwise be a loss to the manufacturer, it would be well for physicians to weigh carefully the respective merits of the two forms in their own clinical experience. Physicians should indicate on their orders whether U. S. P. or Globulin serum is desired.

Antidiphtheric Serum, both U. S. P. and Globulin, appears on the market in bulbs, vials, and most generally in piston-syringe containers, in packages containing 500, 1000, 2000, 3000, 4000, 5000 and up to 10,000 units. The serum gradually loses in power, the loss in one year varying between ten and thirty per cent. The date beyond which the serum will no longer have the strength indicated, appears on the label, but manufacturers generally allow an excess of units so that serum not too long out-of-date can be relied upon in case no fresh supply is available.

The U. S. P. gives 3000 units as the average dose, and 500 units as immunizing dose for well persons. As the main problem presented in a case of diphtheria is the neutralization of a specific toxin, the antidote cannot be too soon administered, and in doses sufficient to neutralize the poison beyond the shadow of a doubt. An excess of antitoxin can do no harm, while in laboratory experiments on guinea-pigs, it is shown that the delay of only one hour after the injection of diphtheria toxin, makes necessary the administration of forty times as much antitoxin as would be necessary with simultaneous injections of toxin and antitoxin. A “given up” case of diphtheria recovered after the use of 160,000 units. Detailed information as to dosage and mode of administration invariably accompanies the package.

The Act of Congress approved July 1, 1902, provides that no one be allowed to engage in interstate traffic in antitoxin without a license issued by the Secretary of the Treasury on recommendation of the Surgeon-General of the Public Health and Marine Hospital Service. This license is issued only after a careful inspection of the establishment, its methods of manufacture, and an examination of its products for purity and potency. It regulates also the sale of viruses, serums, toxins and analogous products, and imposes upon the Director of the Hygienic Laboratory the duty of examining such products. From time to time purchases are made on the open market by officers of the P. H. and M. H. S. stationed in various parts of the country and the products sent to the Hygienic Laboratory where they are examined for potency and freedom from contamination by foreign bacteria and chemical poisons, especially tetanus toxin. If found not to conform to the prescribed requirements, the manufacturer is notified to withdraw that particular lot

from sale and guard against a repetition of the offense.

REFERENCES:

- United States Pharmacopoeia—8th Revision (1905).
- The National-Standard Dispensatory.
- The Immunity Unit—Bulletin No. 21, P. H. and M. H. S.
- New and Non-official Remedies, A. M. A.
- Bulletins: The Cutter Laboratory, Berkeley, Cal.
- H. K. Mulford Co., Philadelphia, Pa.
- Parke, Davis & Co., Detroit, Michigan.

PROCEEDINGS OF THE SAN FRANCISCO COUNTY MEDICAL SOCIETY.

During the month of February the following meetings were held:

Section on Medicine, Tuesday, February 7, 1911.

- 1—Presentation of a Case of Polycythemia with Splenomegaly, and a Case of Alkaptonuria with Pigmentation of Skin and Cartilages, Major P. M. Ashburn, United States Army.
- 2—Exhibition of Cases of Pituitary Disease, Herbert C. Moffitt. Discussed by Drs. Quinan and Moffitt.
- 3—Use and Abuse of Tuberculin, Wm. C. Voor-sanger.

General Meeting, Tuesday, February 14, 1911.

- 1—Discussion on paper “Vaccine Therapy” by A. F. Shafer, read at the January meeting. Drs. Rosenstirn, Dannenbaum, N. N. Brown, Kuhlman, Cheney, Arnold, P. K. Brown, Power, Bine, Russ, Clark, Tait, Hunkin, Quinan, Rykogel, Porter, Artiges and Coffey.
- 2—Bovine Tuberculosis in its Relation to Public Health, Geo. S. Baker, U. S. Dept. Agriculture. Discussed by Drs. Rosenstirn, Fleischner, Chipman, Porter, Kuhlman, Baker.

Section on Surgery, Tuesday, February 21, 1911.

- 1—Presentation of Case, E. G. Frisbie.
- 2—Demonstration of Two Specimens of Large Vesical Calculi Removed from Female Bladders by Litholapaxy and the Operating Cystoscope, Henry Meyer.
- 3—A Report of Four Cases of Perforating Gun-shot Wounds of the Abdomen, I. W. Thorne.
- 4—A Gauze Sponge Left in the Skull for Over Six and One-half Years, Harry M. Sherman. Discussed by Drs. Rosenstirn and Sherman.
- 5—Two Cases of Acute Perforating Diverticulitis, Chas. G. Levison. Discussed by Drs. Russ, Eloesser, Rosenstirn, Sherman, Levison.

Eye, Ear, Nose and Throat Section, Tuesday, February 28, 1911.

- 1—Demonstration of Cases, V. F. Lucchetti. Discussed by Dr. Welty.
- 2—Demonstration of Cases of Tuberculosis of the Eye, E. W. Alexander.
- 3—Report of Recent Ear Literature, Harrington B. Graham.
- 4—Report of Recent Eye Literature, E. W. Alexander.
- 5—The Eye Symptoms of Intracranial Growth, Wm. F. Blake. Discussed by Drs. Pischel, Alexander, McClenahan, Welty, Pischel, Blake.

Section on Medicine, February 7, 1911.

Exhibition of Cases of Pituitary Disease.

By HERBERT C. MOFFITT, M. D., San Francisco.

In the California State Journal of July of last year I reported several cases of hypophysis disease. This evening I desire to present patients illustrating both hypo- and hyper-pituitarism.

Case 1. The first patient is a woman of 29, unmarried, born in San Francisco. She was always a fat baby and child but not abnormally so. At the age of 11 she had severe scarlet fever and her mother says some abscesses formed “between the nose and the mouth.” This suggests she may have had some suppuration in the pharynx or possibly in the nasal sinuses. She began to have some headache at the age of 12 or 13 and grew considerably

stouter about this time. At 14 she had a fall from a swing and hurt her back without hurting her head particularly. About this time she menstruated and this occurred irregularly about nine times in all. In the high school a little later she began to suffer very severely from headaches and began to grow stouter. Gradually the eyesight failed and she became almost totally blind. She was examined by Dr. William Hopkins, who said there was a brain tumor. The headaches continued for a long time; she had irregular vomiting, projectile in type; could not see to read. Gradually the sight improved, her headaches got better and she was able to read and paint miniatures. The periods did not return. She was free from symptoms until the end of 1906 and early 1907.

Then headache returned and the vision failed. She was examined by a London physician, who made a diagnosis of tumor near the optic chiasm. She was put on pituitary extract, which she took for three or four months. The sight failed completely in the left eye and she could only see objects in the nasal half of the right field of vision. In the last year she has suffered comparatively little with headache but has developed an incoordination and weakness of the right arm and leg. She loses her balance easily, has fallen a number of times, and gradually the hemiplegia on the right side has increased to almost total disability. She is somnolent and somewhat dull mentally.

You will notice that the face is that of a child rather than that of a woman—round and chubby. She looks like a big, fat girl of 14 or 15. She is above rather than under the average height. The weight in August last was 230. The hands are chubby and child-like. There are no acromegalic changes. The scalp hair is normal—the axillary and pubic hair scanty. There has been no polyuria or glycosuria. There is a divergent squint and a right-sided hemiplegia with involvement of the lower face, increased reflexes and positive Babinski. There is considerable ataxia of the right arm. Locomotion has recently become impossible. There is bilateral optic atrophy, more marked in the left eye. A little vision still persists in the nasal half of the right field. The X-ray plate shows changes in the sella turcica and adjacent bony structures.

Case 2. E. J. C., aged 44, born in California, a painter and decorator, entered the University of California Hospital December 5, 1910.

Father died from pneumonia at 84. Mother died from cancer at 76. One sister died of cancer—was paraplegic and blind. Five brothers and sisters died in infancy. One brother alive and well.

Married sixteen years. Two children living and well, one died of tubercular meningitis seven years ago.

Previous History. Had spasms as a child. Sight of left eye always poor and always had a squint. Scarletina as a child—no sequelae. Broke left arm as a child. Rheumatic fever at 16 and was three weeks in bed. At 17 had what was called a soft chancre followed by a suppurating inguinal bubo. No signs suggesting syphilis. No lead poisoning. Eight years ago fell thirty or forty feet, dislocated left shoulder and hurt back—did not injure head. Eyes were examined two weeks after injury, as the sight in right eye had begun to fail. Atrophy of left optic nerve was determined at this time but was not referred to the injury. Some weeks after the fall the sight in right eye had diminished to such an extent that he could not recognize his children and could not read. Gradually vision improved and he has noticed no trouble recently.

Headaches began to be severe five years ago and persisted at intervals until last summer. At times pain, apparently deep within the head, would be extreme and prevent sleep and work.

Vertigo would occasionally occur but was not pronounced. There was no vomiting. His appetite for the past few years has been voracious at times. He has been a heavy drinker and smoker.

Enuresis nocturna was a symptom in boyhood

and he has always had some difficulty in retaining urine. Polyuria has not been observed.

He has had more or less cough for a number of years and in the last two years has had moderate dyspnea on exertion.

Present Symptoms. Early in November he began to have pain in feet and ankles and later in knees, hips, shoulders, wrists and hands. There was some swelling of hands and feet but no redness. A band of pressure was felt about the abdomen, elbows and knees.

In the hospital salicylates and later colchicum and iodid were used without influence upon the joint pains. Temperature, pulse and respiratory charts were normal. There was a decided secondary anemia, 4,100,000 red cells, 13,000 to 19,000 leukocytes, hemoglobin 50 to 55%. The urine varied from 1000 to 1800 c.c., contained neither albumen or sugar and alimentary glycosuria was negative. No signs of lead were found on the gums and stippling of the red cells was not present. No explanation of the secondary anemia (occult bleeding, parasites, etc.) could be obtained.

The heart was dilated with a systolic murmur over the precordia. The liver was moderately enlarged.

The facies and voice suggested acromegaly. The patient says his face and hands have always been large and he has noted no recent changes. Old photographs are not available. The left fundus shows old pigmentary and atrophic changes. The right disc is pathologically pale and the field of vision taken by Dr. Alexander shows loss of the temporal half. The X-ray plate shows an abnormally deep and wide sella turcica.

This combination can hardly be due to anything but pituitary disease with enlargement of the gland. From the history, atrophic changes in the left eye were present before his fall eight years ago; post-traumatic hydrocephalus could scarcely cause temporal hemianopsia and there is no sinusitis. Moreover, we know that trauma frequently awakens quiescent hypophysis disease. The severe, long-continued headaches would readily be explained by the intracranial growth.

Is there evidence in the general examination of hyperpituitarism? I think there is. The face is much larger proportionally than the skull. The nose is large, the lower jaw very large and prominent. The spaces between the front teeth of the upper jaw are unusually wide. There are moderate changes in many joints, crepitus and somewhat limited motion in shoulders, elbows, knees, hips and spine. There is no pronounced kyphosis. The changes in the hands and feet are most marked. They suggest chronic infectious arthritis or arthritis deformans. But the shape of the hands is peculiar. The hands are very big, paw-like but not tremendous. He thinks they have not recently grown. The thumb of the right hand is much thicker than the left. The sausage-shaped fingers show particularly well in the X-ray plate. The nails are small in comparison to the size of the fingers. The phalanges are broader than normal. Slight periosteal thickening may be seen in places and these correspond to the points of tenderness on pressure.

Gout and lead may be ruled out as causes of the joint changes. Syphilis may fairly be eliminated by the absence of stigmata and by the negative Wassermann reaction on two examinations. Whether all the joint changes may be referred to acromegaly is decidedly questionable. Joint pains are frequent in the course of the disease; swelling and crepitus have been observed. Schulz has reported a combination of arthritis deformans and acromegaly. It is interesting to remember in this connection that chronic arthritis resembling arthritis deformans may occur in thyroid insufficiency, and that arthritis deformans has several times been observed in combination with sclerodema, Raynaud's complex and myxedema.

Discussion—Clarence Quinan: I have been much interested in this subject for the past four-five years,

and have done some work on the pathological side of it.

At the moment, certain questions occur to me. Among others, I may ask what we know concerning the biochemical activities of the pituitary gland? Undoubtedly, I think, the reply is that we know very little about it, very little indeed, even though there be a fairly extensive literature relative to the morphological peculiarities of its cells. And what evidence is there, if any, to justify us in considering this gland as an independent unit apart from the allied blood vessel glands? Are we as yet able to prove, for example, that, irrespective of a mere gland mass factor, the pituitary secretion alone causes peculiar and definite clinical symptoms? I think not. Certainly none which can be identified in this individual.

The trophic changes occurring in acromegaly are, of course, well known. They are considered to be secondary to a morbid pituitary status. Usually, however, they are so conspicuous as hardly to be mistaken or misinterpreted. But, obviously, none of them is present in this patient. His face, it is true, is rather heavy, but not exceptionally so, by any means, and it has not at all the leonine appearance seen in acromegaly. The early skin changes are also absent. The superciliary ridges are not thickened, there certainly is no prognathism, and, moreover, there is an entire absence of the typical kyphosis. I am besides unable to agree with Dr. Moffitt that there are phalangeal changes at all characteristic or worthy of special note.

As to the X-ray picture, I feel inclined to accept with reserve the interpretation of the shadows at the base. At best such observations are unreliable. May not the lateral view of the sella turcica in many cases be rendered obscure by the overhanging clinoid processes?

Considering the age of this patient, his manifest freedom from the characteristic signs of pituitary disease as we recognize it in acromegaly, it seems improbable that the gland is definitely morbid. It is well to remember that, in the presence of outspoken disease of the gland the peripheral changes are usually rather striking. It is doubtful whether we can detect minor alterations of its function.

Upon the whole, therefore, it seems hardly justifiable to make a diagnosis of pituitary disease where, as in this instance, the objective data are so meager and inconclusive.

Herbert C. Moffitt: I purposely presented this man to get some discussion. I am sorry that Dr. Quinan has not kept in touch with recent literature on this subject, because he would then know that a great deal of work has been done on the question of hypophysis enlargement in eunuchs. In the book by Lamois and Roy, which is a most fascinating one on acromegaly and giantism, a number of pages are given to the discussion of this literature on this form of hypophysis enlargement. I certainly agree with Dr. Cooper that we have to demonstrate some actual destruction or actual dislocation of the clinoid process before we can say whether there is a growth in the pituitary fossa. As mentioned in connection with this man, hydrocephalus may give rise to optic change, and yet we see not a few cases of hydrocephalus in children with secondary involvement of the pituitary fossa and signs that suggest the pituitary secretion has been affected by pressure on the gland. The changes that we get in the extremities in marked cases of acromegaly are unmistakable; we may recognize such cases on the streets. We must remember that these changes are not necessarily progressive, they may be distinctly intermittent, the period of growth may alternate with a period of quiescence, contrary to what Dr. Quinan noticed in his case. In the cases of hypopituitarism that I have seen, the appetite has not been excessive. I had a case of a woman in Berkeley who was quite stout, and her appetite was decidedly below the normal. The young woman whose case I presented to-night has no abnormal appetite; this man has a most voracious one.

Section on Surgery, Tuesday, February 21, 1911.

Demonstration of Two Specimens of Large Vesical Calculi Removed from Female Bladders by Litholapaxy and the Operating Cystoscope.

By HENRY MEYER, M. D., San Francisco.

Specimen No. 1. Was taken from a married lady, 34 years of age, with three children. Her bladder symptoms were more or less constant and existed for a long but indefinite period; frequent urination, tenesmus and pyuria were present. Cystoscopy showed a large calculus, movable in the bladder, black in color. This calculus measured one and one-half inches in diameter.

February 6 I operated the patient, first with the ordinary lithotrite and evacuated the crystalline covering (which averaged three-sixteenths of an inch in thickness) which surrounded a nucleus which proved to be a foreign body. Cystoscopy then showed a large mass lying in the bladder, green in color, which was broken apart with the operating cystoscope into several masses, and each piece was grasped and removed separately through the urethra with the Nitze operating cystoscope, under the guidance of my own eye. The masses proved to be some variety of wood which is capable of swelling in water: the water in which it is immersed becomes viscid. The green color is due to the absorption of methylene blue which had been prescribed for her. The operation was performed and completed at one sitting; two drams of a two per cent solution of novocain was instilled into the urethra and the operation was both painless and bloodless. No reaction followed, and the patient was well immediately after the operation and has remained so. She states that she does not know how the substance entered the bladder, and does not know the nature of it.

Specimen No. 2. The debris of a very large phosphatic calculus was removed from the bladder of a married lady, 44 years of age, by litholapaxy. It had no foreign body as a nucleus. This was the most aggravated case of cystitis I have ever seen; it was associated with severe tenesmus, pyuria, hematuria and phosphaturia and the urine was very foul. This patient enjoyed no freedom from pain for several years. She had no control of the vesical sphincter for two years and this loss of control of the sphincter of the bladder was complete under profound narcosis, making it exceedingly difficult to open the lithotrite in a bladder contracted around this calculus, which was two inches in diameter. This patient suffered excruciating pain spontaneously and no instrument could be tolerated in the bladder without a general anesthetic. The operation was completed in one sitting, the patient experiencing great relief as a result of the operation. Three weeks after the operation, while free from most of her pain and discomfort, she had only regained slight use of her bladder sphincter, most of her urine dribbled from the bladder as it did before the operation. The cystitis was gradually subsiding. This was an aggravated case of phosphaturia associated with calculus, and the first case of very large calculus in the female bladder that I have met with in my experience without the existence of a foreign body as a nucleus.

A Report of Four Cases of Perforating Gunshot Wound of the Abdomen.

By I. W. THORNE, M. D., San Francisco.

There is no difference of opinion as far as I have been able to learn existing between modern writers on the subject of penetrating gunshot wounds of the abdomen—be these writers civil or military—as to the treatment of such wounds. The methods of civil and military practice differ vastly, however. The reason for which may be found in any late